

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listing of claims:

Listing of Claims:

Claim 1 (currently amended): A notebook computer capable of receiving infrared signals from an infrared input device, comprising:

a computer base ~~section containing a keyboard and having a base frame~~;

a display section, ~~said display section~~ comprising a display screen surrounded by a frame ~~with a bezel holding a liquid crystal display~~, said display section coupled to said computer base by one or more hinges; and

an infrared sensor attached to said notebook computer; wherein said infrared sensor is disposed on the ~~display~~ frame of said display section so that a wide angle infrared detection response is achieved.

Claim 2 (previously presented): The notebook computer of Claim 1, wherein said infrared sensor is disposed on an upper portion of said frame of said display section.

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Claim 3 (original): The notebook computer of Claim 1, further comprising at least one additional infrared sensor disposed on said notebook computer.

Claim 4 (currently amended): A notebook computer adapted to receive infrared signals from an infrared input device, comprising:

a computer base ~~section contained a keyboard and having a base frame~~;

a display section, ~~said display section~~ comprising a display screen surrounded by a frame ~~with a bezel holding a liquid crystal display~~, said display section coupled to said computer base by one or more hinges;

at least two infrared sensors ~~coupled to said notebook computer~~; and

a signal combining element to combine the output signals from said sensors;

wherein said infrared sensors are disposed so that a wide angle infrared detection response is achieved.

Claim 5 (currently amended): The notebook computer of Claim 4, wherein at least one of said infrared sensors is disposed on the display frame of said display section.

Claim 6 (currently amended): The notebook computer of Claim 4, wherein at least one of said sensors is an external elevated sensor coupled to said computer base section.

Claim 7 (currently amended): The notebook computer of Claim 4, wherein two of said infrared sensors ~~consist of two sensors~~ are disposed on the ~~in the~~ bezel frame of said display section.

Claim 8 (previously presented): The notebook computer of Claim 7, wherein said infrared sensors are disposed proximate to the hinge region of said display frame.

Claim 9 (canceled).

Claim 10 (currently amended): An input device ~~for controlling positional information~~ for a computer, comprising:

a housing;

a rotatable ball ~~capable of being rotated to determine the cursor position, the ball~~ coupled to said housing;

an optical encoder comprising photo-interruptors disposed in said housing, said optical encoder providing output signals in response to rotation of said ball; and

a control circuit ~~disposed in said frame~~, said control circuit receiving as inputs said output signals of said optical encoder, said control circuit also capable of controlling the power to said photo-interruptors of said optical encoder;

wherein said control circuit conserves power by operating said optical encoder in a periodic-pulsed mode when said ball is at rest longer than a preselected time interval and said control circuit utilizes said signals of said encoder in said periodic-pulsed mode to determine when to resume a continuous position sensing encoder mode.

Claim 11 (currently amended): The input device of Claim 10, further comprising an infrared transmitter ~~coupled to said housing~~ to transmit data ~~pulses~~ corresponding to the output signals of said optical encoder ~~in the position sensing mode~~.

Claim 12 (currently amended): The input device of Claim 11, further comprising a range switch ~~coupled to said housing~~, said range switch comprising at least two infrared transmitter power settings ~~for said wireless transmitter~~.

Claim 13 (currently amended): The input device of Claim 11 wherein the infrared transmitter transmits the data ~~pulses~~ as bytes with a start bit; and wherein no infrared data ~~pulses~~ are transmitted when said ball is in said power conservation ~~a quiescent~~ state.

Claim 14 (original): The input device of Claim 13, further comprising a user settable identification code.

Claim 15 (original): The input device of Claim 11, further comprising a laser pointer.

Claim 16 (currently amended): A compact ergonomic ~~multi-input~~ infrared input device ⁽¹⁶⁾ ~~for a notebook computer~~ designed to be operated in two different hand and finger positions, comprising: (1, 65-2, 5)

a housing, said housing having a substantially planar bottom surface, a substantially planar top surface, flared sides, and a first end and a second end; (1, 63)

at least one mouse button coupled to said top surface of said housing proximate to said first end; (2, 20-25)

a first pointing device ⁽⁴⁴⁾ comprising a mouse ball coupled to said bottom surface of said housing; and (3, 21-24)

an optical encoder coupled to said mouse ball, said optical encoder comprising photo-interruptors to measure the motion of said mouse ball;

a second pointing device ~~emulating the pointing function of a mouse~~ disposed on the top surface of said housing; and

(58)
an infrared transmitter ~~coupled to said first end of said housing~~ to transmit ~~motion~~
positional information from said ~~rotary encoders~~ first and said second pointing devices; 2,59-05)

wherein said housing is dimensioned so that said input device may be operated as a mouse with the index and middle fingers of the hand on the top surface of said housing and with a portion of the thumb along the edge of said housing; and

wherein said housing is further dimensioned so that said input device may be held along its bottom surface in the palm of a user's hand ~~with the entire top surface accessible~~ such that the second pointing device on said top portion may be operated by the thumb.

Claim 17 (original): The input device of Claim 16, wherein said second pointing device is a touchpad.

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Claims 18 – 19 (canceled).

Claim 20 (original): The input device of Claim 16, wherein said second pointing device is a trackball.

Claim 21 (original): The input device of Claim 16, wherein said second pointing device is an ergo track input device.

Claim 22 (original): The input device of Claim 16, wherein said second pointing device is an eraser-head type input device.

Claim 23 (original): The input device of Claim 16, further comprising a laser pointer.

Claim 24 (currently amended): A multi-input infrared input unit ~~for a notebook,~~
comprising:

a housing, said housing having a substantially planar bottom surface, a substantially planar top surface, flared sides, and a first end and a second end;

at least one mouse button coupled to said top surface of said housing proximate to said first end;

a mouse ball coupled to said bottom surface of said housing;
an optical encoder coupled to said mouse ball, said optical encoder comprising photo-interruptors responsive to ~~measure the~~ motion of said mouse ball;
a data input device to receive non-pointer related information, ~~said data input device disposed on said housing~~; and
an infrared transmitter ~~coupled to said first end of said housing~~ to transmit digital data;
a control circuit coupled to said optical encoder and said data input device; and
a mode control switch coupled to said control circuit, said mode control switch acting to select between a mouse mode and at least one other data input mode;
wherein said control circuit acts in said mouse mode to transmit infrared data ~~pulses~~ corresponding to positional information from ~~the state of~~ said optical encoder and said control circuit acts in said data input mode to transmit infrared data ~~pulses~~ corresponding to information received by said data input device.

Claim Claim 25 (original): The multi-input infrared input unit of Claim 24, wherein said data input device is a microphone.

Claim 26 – 27 (canceled).

Claim 28 (original): The multi-input infrared input unit of Claim 24, wherein said data input device is a joystick.

Claim 29 (currently amended): A notebook computer system, comprising:
an infrared input device having a first pointing device, said infrared input device comprising an infrared transmitter for transmitting positional control information as infrared signals;
a notebook computer comprising a computer base, said computer base comprising section ~~with~~ a second pointing device ~~mounted on said computer base section~~ and a display screen ~~section comprising surrounded by a frame with a bezel holding a liquid crystal display~~;
an infrared receiver coupled to said notebook computer to receive positional control information from said infrared input device; and

a signal arbitration circuit to determine how inputs from said first pointing device and said second pointing device are used to control pointer position;

wherein said infrared input device is dimensioned to removably fit into said computer base ~~section of said notebook computer~~.

Claim 30 (currently amended): The notebook computer system of Claim 29, comprising ~~a third pointing device connected to~~ an external port for receiving the output of a third pointing device and wherein said signal arbitration circuit determines how inputs from said first, second and third ~~cursor~~ pointing devices are used.

Claim 31 (previously presented): The notebook computer system of Claim 30, wherein an arbitration criteria of said signal arbitration circuit is user selectable as to which of said first, second and third pointing devices have priority or are locked-out.

Claim 32 (previously presented): The notebook computer system of Claim 31, wherein said second pointing device is always enabled and said arbitration criteria may be selected to lock-out said inputs from said infrared input device.

Claim 33 (currently amended): The notebook computer system of Claim 29, wherein said notebook computer ~~may be programmed to simultaneously accept~~ arbitration circuit responds to control inputs from both said second pointing device and said infrared input device such that both pointing devices may be used at the same time.

Claim 34 (currently amended): A portable computer capable of receiving signals from a first detached input device by wireless transmission, comprising:

a computer base containing a second input device;

a display section, said display section comprising a display, said display section attached to said computer base; and

at least one receiver disposed on said display section, ~~said at least one receiver for~~ receiving signals from said first detached input device by wireless transmission; wherein said at least one receiver is disposed so that a wide angle wireless detection response is achieved.

Claim 35 (previously presented): The portable computer of Claim 34, comprising a hinge, wherein said hinge is attached to a lower portion of said display section, coupling said display section to said computer base, wherein said at least one receiver is disposed on an upper portion of said display section.

Claim 36 (previously presented): The portable computer of Claim 34, comprising at least two receivers.

Claim 37 (previously presented): The portable computer of Claim 34, wherein said display section is coupled to said computer base by a hinge and said receiver is disposed proximate to said hinge.

Claim 38 (currently amended): A portable computer adapted to receive wireless signals from a first input pointing device, comprising:

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a computer base ~~section containing~~ comprising a second input pointing device;

a display screen surrounded by a display frame ~~section, said display section comprising a display, said display section~~ attached to said computer base section; and

at least two receivers for receiving wireless signals from said first input pointing device.

Claim 39 (currently amended): The portable computer of Claim 38, ~~wherein said display section comprises a display frame, and~~ wherein at least one of said receivers is disposed on said display frame.

Claim 40 (currently amended): The portable computer of Claim 38, ~~wherein said display section comprises a display frame, and wherein said at least two receivers consist of two~~ receivers are disposed in said display frame.

Claim 41 (currently amended): The portable computer of Claim 40, wherein said display section is coupled to said computer base section by one or more hinges and each of said sensors is disposed proximate to a ~~one of said one or more~~ hinge[s].

Claim 42 (currently amended): The input device of Claim 10, further comprising a wireless transmitter for transmitting data ~~pulses~~ corresponding to the output ~~signals~~ of said optical encoder ~~in the position sensing mode~~.

Claim 43 (currently amended): The input device of Claim 42, further comprising a range switch comprising at least two power settings for controlling the output power of said wireless transmitter.

Claim 44 (currently amended): The input device of Claim 42, wherein said wireless transmitter transmits the data ~~pulses~~ as bytes with a start bit; and wherein no data ~~pulses~~ are transmitted when said ball is in said power conservation ~~a quiescent~~ state.

Claim 45 (previously presented): The input device of Claim 44, further comprising a user settable identification code.

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Claim 46 (previously presented): The input device of Claim 44, further comprising a laser pointer.

Claim 47 (currently amended): An input device comprising:
a housing having top and bottom portions;
a first pointing device, ~~mounted~~ disposed on said bottom portion of said housing;
a second pointing device, ~~mounted~~ disposed on said top portion of said housing;
a transmitter to transmit information from said first and said second pointing devices;
wherein said housing is dimensioned so that said input device may be gripped by a user's hand and operated as a mouse by movement of the device on a surface; and
wherein said housing is further dimensioned so that said input device may be held along its bottom portion in the palm of a user's hand ~~with the entire top portion accessible~~ such that the second pointing device on said top portion may be operated by a thumb.

Claim 48 (previously presented): The input device of Claim 47, wherein said second pointing device is a touchpad.

Claim 49 (previously presented): The input device of Claim 47, wherein said second pointing device is a trackball.

Claim 50 (previously presented): The input device of Claim 47, wherein said second pointing device is an ergo track input device.

Claim 51 (previously presented): The input device of Claim 47, wherein said second pointing device is an eraser-head type input device.

Claim 52 (previously presented): The input device of Claim 47, comprising a laser pointer.

Claim 53 (previously presented): A wireless input device for transmitting data to a computer, comprising:

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- a housing,
- a pointing device for generating positional information, mounted on said housing;
- a non-pointing device mounted on said housing, for generating input information for the computer;
- a transmitter for transmitting data from said pointing and non-pointing devices; and
- a selector for choosing between operating said input device as said pointing device or as said non-pointing device.

Claim 54 (previously presented): The input device of Claim 53, wherein said non-pointing device is a sound input means.

Claim 55 (previously presented): The input device of Claim 53, wherein said non-pointing device is a joystick.

Claim 56 (previously presented): A computer system, comprising:

a remotely operable wireless input device having a first pointing device which transmits positional information;

a portable computer comprising a computer base, a second pointing device mounted on said computer base, a display and a receiver which receives said positional information from said input device; and

a signal arbitration circuit to determine how inputs from said first pointing device and said second pointing device are used to control pointer position;

wherein said input device is dimensioned to removably fit into said computer base.

Claim 57 (currently amended): The computer system of Claim 56, comprising ~~a third pointing device connected to~~ an external port for connecting a third pointing device, wherein said signal arbitration circuit determines how inputs from said first, second and third pointing devices are used.

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Claim 58 (previously presented): The computer system of Claim 57, wherein an arbitration criteria of said signal arbitration circuit is user selectable as to which of said first, second and third pointing devices have priority or are locked-out.

Claim 59 (previously presented): The computer system of Claim 58, wherein said second pointing device is always enabled and said arbitration criteria may be selected to lock-out inputs from said input device.

Claim 60 (currently amended): The computer system of Claim 56, wherein said computer may be programmed to simultaneously ~~accept~~ respond to inputs from both said second pointing device and said input device.

Claim 61 (currently amended): A computer system, comprising:
a first input device having a housing having a top and a bottom; a first pointing device, ~~mounted to~~ disposed on said bottom of said housing; a second pointing device, ~~mounted to~~ disposed on said top of said housing, and a transmitter to transmit information from said first ~~or~~ and second pointing devices; and

a portable computer having a computer base with a second input device mounted on said computer base, a display section connected to said computer base and a receiver for receiving said information by wireless transmission;

wherein said computer base of said portable computer has a recess for receiving said first input device, wherein said recess is mounted in front of said second input device.

Claim 62 (previously presented): The computer system of said claim 61, wherein said receiver is mounted on said display section.

Claims 63 – 64 (canceled).

Claim 65 (currently amended): A computer system, comprising:

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a first input device comprising a housing, a pointing device and a transmitter to transmit information from said pointing device; and

a portable computer having a computer base with a second input device mounted on said computer base, a display connected to said computer base and a receiver for receiving said information by wireless transmission;

wherein said computer base of said portable computer has a recess for receiving said first input device, wherein said recess is mounted in front of said second input device.
